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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/714,412

11/13/2003

Ranjeeta Singh

5038-336

2039

32231

7590

06/13/2008

MARGER JOHNSON & MCCOLLOM, P.C. - Intel
210 SW MORRISON STREET, SUITE 400
PORTLAND, OR 97204

EXAMINER

HO, DUC CHI

ART UNIT

PAPER NUMBER

2619

MAIL DATE

DELIVERY MODE

06/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/714,412	Applicant(s) SINGH ET AL.	
	Examiner Duc C. Ho	Art Unit 2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 16-21 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Specification

1. The disclosure is objected to because of the following informalities: Applicant is requested to amend the specification for providing adequate support for the limitation of claim 21.

Appropriate correction is required.

Claim Objections

2. Claim 21 is objected to because of the following informalities: Regarding claim 21, Applicant is suggested to follow the suggested formats below to avoid a rejection under 35 U.S.C. 101.

Appropriate correction is required.

Examples of acceptable language in computer-processing related claims:

- I. "computer readable medium" encoded with _____
 - [a] "a computer program"
 - [b] "software"
 - [c] "computer executable instructions"
 - [d] "instructions capable of being executed by a computer"
- II. "a computer readable medium" _____ "computer program"
 - [a] storing a
 - [b] embodied with a
 - [c] encoded with a
 - [d] having a stored
 - [e] having an encoded

Allowable Subject Matter

3. The indicated allowability of claims 1-7, and 16-21 are withdrawn in view of new ground of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-5, and 16-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Yavatkar et al.(US 2003/0128668), hereinafter referred to as Yavatkar.

Regarding claim 1, Yavatkar discloses distributed implementation of control protocols in routers and switches. Figure 2 is a block diagram of a router with control and forwarding processors. The router 20-fig.2 as one of routers 12-fig.1 transmits and receives packets to/from the networks 10(a-c). Each router supports various control protocols, such as PSPF, RIP, LDP and RSVP, see 0012.

at least one control processor (the control-plane 22 of the router 20-fig.2 includes a control processor 23-fig.2, see 0015-0016);

at least one forwarding processor communicatively coupled to the at least one control processor (the router 20-fig 2 also includes a forwarding processor 25

communicatively coupled to the control processor, see 0017);

at least one ingress interface for connecting the network device to a network (the physical ports 28-fig.2 each includes a plurality of virtual interfaces functioning as ingress/egress interface on a physical interface for receiving information in form of packet, see 0018-0019, and claim 12);

a virtual interface (a virtual interface of the port 28 of the forwarding plane 24a-fig.2) *interposed between the control processor and the ingress interface to receive a packet from the ingress interface* (the virtual interface receives the packets from the port), *and determine if it is compatible with an operating system running on the control processor, and, if necessary, convert it to a compatible format for the operating system* (the process 40, step 405-fig.4 processes the packet based on one of the protocols implemented on the control-plane and the forwarding engine. In other words, the virtual interface inherently determines if the protocol of the received packet is the same of that of the router, i.e., OSPF and if necessary changes the packet to the correct protocol, i.e. OSPF format, see 0029-0030).

Regarding claim 2, in Yavatkar the device 20-fig.2 is a router, see 0015.

Regarding claim 3, in Yavatkar the device could be a switch, see 0001.

Regarding claim 4, the router 20-fig.2 is configured to run different protocols or operating systems on the control processor and the forwarding processor, see 0029.

Regarding claim 5, the virtual interface of the port 28-fig.2 of the plane 24a is able to receive a packet from the control processor, and inherently determining if the packet could be processed with the protocol operating on the forwarding processor, and if necessary changing it to a correct protocol of the forwarding processor.

Regarding claim 16, the claim has similar limitations as claims 1 and 5. Therefore, it is rejected under Yavatka-Putzolo for the same reasons set forth in the rejection of claims 1 and 5.

Regarding claim 17, in Yavatka a packet can be forwarded to another router, i.e. from router 12 to router 14-fig.1 on the network.

Regarding claim 18, in Yavatka the router 20-fig.2 is used for routing the data packet.

Regarding claim 19, the forwarding processor and the control processor-fig.2 is capable of running their protocols independently, see 0029.

Regarding claim 20, the processor 23-fig. 2 of Yavatka inherently configured to execute instructions to perform the steps of claim 16.

Regarding claim 21, the processor 23-fig. 2 of Yavatka inherently configured to execute instructions having stored in a computer-readable medium to perform the steps of claim 16.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Yavatkar et al.(US 2003/0128668), hereinafter referred to as Yavatkar, in view of Putzolu (Software API framework implementation agreement-IDS record).

Regarding claim 6, Yavatkar discloses all claimed limitations, except the network device comprises a packet handler constructed and arranged to direct a packet from the control processor to a selected egress interface.

Putzolu discloses software API framework implementation agreement. The packet handler is used to deliver and accept frames from the control plane software, see 5.2-page 14. The packet handler-fig.4 permits applications to send and receive packets through forwarding elements, and binding the protocol of the packets to particular physical or logical ports (egress interface) as needed, see 3.2.1 to 3.3.3, page 9.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the packet handler as taught by Putzolo into the system of

Yavatka. The suggestion/motivation for doing so would have been to provide a path for applications to send and receive packets through forwarding elements, and to bind the protocol of the packets to particular egress port needed.

Regarding claim 7, please see the rejection of claim 6. In Putzolo the packet handler could be further constructed and arranged in such a way to select an appropriate control processor input port to receive the packet, see 3.2.1 to 3.3.3, page 9.

Response to Arguments

9. Applicant's arguments with respect to claims 1-7, and 16-21 have been considered but are moot in view of the new ground(s) of rejection.

Allowable subject matter

10. Claims 9-15 are allowed.

11. Claim 8 is objected to as being independent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Art Unit: 2619

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duc Ho whose telephone number is (571) 272-3147.

The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel, can be reached on (571) 272-2988.

13. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

/Duc C Ho/

Primary Examiner, Art Unit 2619

5-11-08

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